



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,936	02/07/2005	Shenghua Huang	051082-0101	9441

22428 7590 01/09/2006

FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

PHUONG, DAI

ART UNIT	PAPER NUMBER
----------	--------------

2688

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/523,936	<b>Applicant(s)</b> HUANG ET AL.	
	<b>Examiner</b> Dai A. Phuong	<b>Art Unit</b> 2688	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8 is/are rejected.
- 7) ☒ Claim(s) 4-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Vanghi (Pub. No: 20020187801).

Regarding claim 1, Vanghi discloses a decision method for inter-frequency hard handoffs in a WCDMA system, using the event-triggered reporting mode, the triggering events including the following basic events: Event 2F (the signal quality on the current frequency point is higher than a certain threshold value), event 2D (the signal quality on the current frequency point is lower than a certain threshold value), and event 2A (the best frequency point changes, that is, there is a non-current frequency point on which the signal quality is better than the signal quality on the current frequency point), the decision method being characterized in comprising at least the following steps: the RNC (Radio Network Controller) queries the specific conditions of the location where the UE (user equipment) is ([0030] to [0032]), and performs inter-frequency measurements, specifying the required measurement events to be 2F and 2D and the relative parameters ([0049] and [0060] to [0062]). Specifically, Vanghi disclose that the mobile station periodically searches for *pilot signals on the target frequency and reports the strength of the pilot signals* that are above a predetermined threshold to base station controller 108); the RNC sends measurement control commands to the UE, specifying the parameters that the UE is required to measure ([0030] to [0032] and [0060] to [0061]); the UE receives the control

Art Unit: 2688

commands and performs the measurement and evaluation, and reports the measurement results when the triggering criteria for the required events are met ([0030] to [0032] and [0060] to [0061]); and the RNC receives the reported results from the UE, and begins to perform the decisions according to the specific events reported by the UE and the RNC's specific decision and execution process ([0030] to [0037] and [0071] to [0077]).

Regarding claim 2, Vanghi discloses all the limitation in claim 1. Further, Vanghi discloses the decision method for inter-frequency hard handoffs according to claim 1, characterized in that, said RNC querying the specific conditions of the location where the UE (user equipment) is and performing inter-frequency measurements is activating a compression mode to perform the measurements ([0071]).

Regarding claim 3, Vanghi discloses all the limitation in claim 1. Further, Vanghi discloses the decision method for inter-frequency hard handoffs according to claim 1, characterized in that, said RNC querying the specific conditions of the location where the UE (user equipment) is and performing inter-frequency measurements is performing the measurements without activating a compression mode at the moment ([0008] to [0016]).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vanghi (Pub. No: 20020187801) in view of Kobayashi et al. (U.S. 6556834).

Regarding claim 8 Vanghi discloses all the limitation in claim 1. However, Vanghi does not disclose the decision method for inter-frequency hard handoffs characterized in that, during the RNC's specific decision and execution process, there is a difference between the thresholds of Event 2F and Event 2D, which usually takes the value of 2 dB.

In the same field of endeavor, Kobayashi et al. disclose the decision method for inter-frequency hard handoffs characterized in that, during the RNC's specific decision and execution process, there is a difference between the thresholds of Event 2F and Event 2D, which usually takes the value of 2 dB (col. 10, lines 27-35)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the CDMA system of Vanghi by specifically including method for inter-frequency hard handoffs characterized in that, during the RNC's specific decision and execution process, there is a difference between the thresholds of Event 2F and Event 2D, which usually takes the value of 2 dB, as taught by Kobayashi et al., the motivation being in order to determine handover procedure by using a threshold set for each quality class.

***Reasons Subject Matter***

5. Claims 4-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 4, the prior art record does not disclose nor fairly suggest the decision method for inter-frequency hard handoffs characterized in that, said UE receives the control

Art Unit: 2688

commands and performs the measurements and evaluation, the evaluation at the UE side being based on the following formula:  $2Q_{\text{carrierj}} = 10 \log M_{\text{carrierj}} = W_j 10 \log \left( \sum_{i=1}^{N_{\text{Aj}}} M_{ij} \right) + (1 - W_j) 10 \log M_{\text{Bestj}} - H$ , wherein:  $Q_{\text{sub.carrierj}}$  is the dB value of estimated quality on frequency j;  $M_{\text{sub.carrierj}}$  is the estimated quality on frequency j;  $M_{\text{sub.ij}}$  is a measurement result of cell i in the active set on frequency j (in case of a non-used frequency point, they are the cells in the virtual active set);  $N_{\text{sub.Aj}}$  is the number of cells in the active set on frequency j;  $M_{\text{sub.Bestj}}$  is the measurement value of the best cell on frequency j;  $W_{\text{sub.j}}$  is the weight factor for frequency j;

Regarding claim 5, the prior art record does not disclose nor fairly suggest the decision method for inter-frequency hard handoffs according characterized in that, said RNC's specific decision and execution process includes the following: **A. when Event 2F is triggered, the RNC requires the UE to perform the decision on Event 2D; B. when Event 2D is triggered, the RNC requires the UE to perform the decisions on Event 2F and Event 2A; C. when Event 2A is triggered, the RNC makes a decision according to the results of the admission control and resource allocation and sends the corresponding message to the UE, and after the hard handoff is performed successfully, the UE performs again the decisions on Event 2F and 2D under the control of the RNC.**

### Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sounvieri et al. (U.S. 6259919) identifying fast speed mobile station

Nanni et al. (U.S. 5517491) controlling frequency deviation

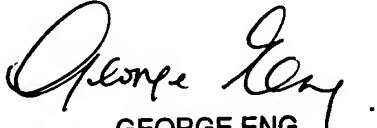
Art Unit: 2688

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eng George can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dai Phuong  
AU: 2688  
Date: 12-22-2005

  
GEORGE ENG  
SUPERVISORY PATENT EXAMINER